

SUPPORT FOR THE AMENDMENTS

The present amendment amends claims 2 and 14, and adds new claims 21 and 22.

Support for the amendment to claims 2 and 14, and newly added claims 21 and 22, is found at specification page 9, Table 2.

It is believed that these amendments have not resulted in the introduction of new matter.

REMARKS

Claims 2 and 6-22 are currently pending in the present application. Claims 2 and 14 have been amended, and new claims 21 and 22 have been added, by the present amendment. Claims 14-17 stand withdrawn from consideration by the Examiner as being directed to a non-elected invention.

The rejection of claims 2-13 and 18-20 under 35 U.S.C. § 102(b) as being anticipated over Bock (U.S. Patent 6,020,419) is respectfully traversed in part and obviated by amendment in part, with respect to claims 2 and 6-22, which incorporates the limitation of the silanized, structurally modified pyrogenic silica having a *tamped density of 123-322 g/L* into amended claims 2 and 14.

Amended claim 2 now recites a lacquer composition comprising: (1) from 20 to 80 wt. % of a polymer composition comprising polyesters, polyacrylates, polymethacrylates, mixtures or copolymers thereof; (2) from 0.5 to 25 wt. % of a silanized, structurally modified pyrogenic silica having attached to the surface thereof one or more of the following: (a) alkylsilyl groups according to the molecular formula $\text{SiC}_n\text{H}_{2n+1}$, wherein n is an integer from 2 to 18; (b) dimethylsilyl groups; and (c) monomethylsilyl groups, wherein said silanized, **structurally modified** pyrogenic silica has a *tamped density of 123-322 g/L*; (3) from 0 to 80 wt. % of one or more solvents; and (4) from 0 to 10 wt. % of an additive.

Bock describes a jet dispersion process for producing a reagglomeration resistant, transparent coating composition comprising a binder resin and pyrogenic silica particles, which are present in an amount of from 0.5 to 25 wt. % based on the weight of the binder resin, wherein the jet dispersion process involves deagglomerating the coating composition by passing the coating composition through a nozzle (See e.g., column 2, lines 50-67, column 3, lines 1-3 and 28-33, claims 1, 3, 4 and 10). Bock also describes utilizing pyrogenic silica that has been *surface* modified (not to be confused with “*structurally* modified”) with hydrophobic groups, such as dimethylsilyl groups, which is marketed by Evonik Degussa under the trademark Aerosil® R 972 (See e.g., column 3, lines 46-67, claims 5 and 6).

In order to further distinguish the claimed “structurally modified” pyrogenic silica from the conventional pyrogenic silica described in Bock and exemplified by the direct comparison set forth in Example 4 and Table 6 on pages 22-24 of the present specification, Applicants have amended claims 2 and 14 to recite that the claimed “structurally modified” pyrogenic silica of the present invention has a tamped density of 123-322 g/L.

Unlike the claimed invention, Bock fails to disclose or suggest that the conventional pyrogenic silica described therein has a tamped density of 123-322 g/L, as presently claimed. As evidenced by Table 12 of Hasenzahl (U.S. 2006/0017038) and the enclosed Aerosil® internet publication, the conventional pyrogenic silica of Bock (e.g., Aerosil® R 972) has a tamped density of approximately 50-64 g/L, which corresponds to the tamped densities of the conventional *non-structurally modified* pyrogenic silica of Comparative Examples 1-4 of Tables 1 and 2 of the present specification and is clearly outside the claimed tamped density range of 123-322 g/L, thereby precluding a *prima facie* case of anticipation or obviousness. As a result, Bock clearly fails to anticipate or render obvious the “structurally modified” pyrogenic silica of the present invention having a tamped density of 123-322 g/L, as presently claimed.

The Office should not speculate as to the scope and content of the claimed subject matter in light of the specification. *In re Steele, Mills and Leis*, 134 USPQ 292, 295 (CCPA 1962). Pursuant to MPEP § 2111.01, during examination, the USPTO must give claims their broadest reasonable interpretation in light of the specification. Based on established U.S. case law, this means that claim terms must be given their ordinary and customary meaning as attributed to them by those of ordinary skill in the art, unless such a meaning is inconsistent with the specification. *ACTV, Inc. v. The Walt Disney Company*, 68 USPQ2d 1516, 1524 (Fed. Cir. 2003); and *In re Zletz*, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

“The ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Phillips v. AWH Corp.*, 75 USPQ2d 1321, 1326

(Fed. Cir. 2005) (*en banc*). The ordinary and customary meaning of a claim term may be evidenced by *intrinsic evidence*, including the claim language, specification and *prosecution history*, and *extrinsic evidence*, including dictionaries and learned treatises, expert and *inventor testimony*, and the *state of the art*, so long as the extrinsic evidence does not contradict claim meanings that are unambiguous in light of the intrinsic evidence. *Phillips* at 1326-1330.

Pursuant to MPEP § 2164.05(a), not everything necessary to practice the claimed invention need be disclosed in the specification. Based on established U.S. case law, the specification need not disclose what is well-known to those skilled in the art and preferably omits that which is well-known to skilled artisans and already available to the public. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991).

“Structurally modified” pyrogenic silica, as recited claim 2, is a term well recognized in the art as meaning pyrogenic silica that has been structurally modified by a rigorous mechanical process such as ball milling. Accordingly, a specific definition of the term “structurally modified” pyrogenic silica was purposely omitted from the present application as being superfluous, since said term was well recognized by skilled artisans as meaning pyrogenic silica that has been structurally modified by a rigorous mechanical process such as ball milling.

Meyer ‘531 (U.S. 2005/0241531) describes that structurally modified pyrogenic silica may be obtained by a mechanical process of ball milling, and that the structurally modified pyrogenic silica may then be subjected to an optional post-grinding process using an air jet mill (See e.g., [0022], [0038], [0039], claims 13 and 14).

Meyer ‘642 (U.S. 2005/0244642) describes that structurally modified pyrogenic silica may be obtained by a mechanical process of ball milling, and that the structurally modified pyrogenic silica may then be subjected to an optional post-grinding process using an air jet mill (See e.g., [0020], [0021], [0027], [0028] and claim 3).

Although Meyer '531 and Meyer '642 were not already available to the public as of the filing date of the present application, these references claim priority to German patent applications filed on August 28, 2002, and therefore reflect the state of knowledge possessed by skilled artisans on and before the filing date of the present application with respect to the term “structurally modified” pyrogenic silica. In fact, this very issue was addressed by inventor Dr. Jürgen Meyer in the previously submitted 37 C.F.R. § 1.132 Declaration, which was filed in the related copending application of Meyer '531.

Moreover, as further evidenced by the following references, the term “structurally modified” pyrogenic silica was, in fact, well-known to those skilled in the art as of the filing date of the present application as meaning pyrogenic silica that has been structurally modified by a rigorous mechanical process such as ball milling.

Meyer '388 (U.S. 2002/0077388) describes that structurally modified silica may be obtained by a mechanical process of destructuring using a ball mill, and that the structurally modified silica may then be subjected to an optional re-grinding process using an air jet mill (See e.g., [0007], [0008] and claim 4).

Nargiello (U.S. Patent 6,193,795) describes that a low structured or destructured pyrogenic metal oxide may be produced by an intense mechanical process of grinding using ball milling (See e.g., abstract, column 1, lines 39-67, column 2, lines 1-8 and 20-23, column 3, lines 34-41, column 5, lines 40-55, claims 1 and 16).

Hartmann (U.S. Patent 5,959,005) describes that destructured silica may be produced by a mechanical process using ball milling, and that the destructured silica may then be subjected to optional air jet milling (See e.g., column 1, lines 35-39, column 2, lines 18-20, claims 2 and 3).

“In the absence of an express intent to impart a novel meaning to the claim terms, the words are presumed to take on the ordinary and customary meanings attributed to them by those of ordinary skill in the art.” *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1298, 67 USPQ2d 1132, 1136 (Fed. Cir. 2003).

Since there is no express definition given for the claim term “structurally modified” pyrogenic silica in the present specification, the term “structurally modified” should be given its broadest reasonable interpretation consistent with the intrinsic record, including the prosecution history, and take on the ordinary and customary meaning attributed to it by inventor Dr. Jürgen Meyer in the previously submitted 37 C.F.R. § 1.132 Declaration and other skilled artisans.

Applicants have extensively discussed and repeatedly emphasized during the prosecution of this case that the claim term “structurally modified” pyrogenic silica, as recited claim 2, means pyrogenic silica that has been structurally modified by a rigorous mechanical process such as ball milling.

Applicants submit that the Examiner has not provided any legal authority to support the unsubstantiated allegation that an inventor’s own issued patent and/or published patent application in existence as of the filing date of the present application cannot serve to establish the ordinary and customary meaning attributed to a claim term by those of ordinary skill in the art.

Contrary to page 3 of the Official Action, based on established U.S. case law, the inventors of the above-mentioned issued patents and published patent applications are in fact persons skilled in the field of the invention. *Phillips* at 1326-1330. Applicants also submit that these issued patents and published patent applications are read by others of ordinary skill in the pertinent art.

The Examiner alleges on page 4 of the Official Action that it has not been made clear how the claimed “structurally modified” pyrogenic silica is different from the conventional pyrogenic silica described in Bock.

Although Applicants respectfully disagree with the Examiner’s allegation, in order to further distinguish the claimed “structurally modified” pyrogenic silica from the conventional pyrogenic silica described in Bock, Applicants have amended claims 2 and 14 to recite that the claimed “structurally modified” pyrogenic silica of the present invention has a tamped density of 123-322 g/L.

Applicants also submit that the fundamental difference between the claimed “structurally modified” pyrogenic silica and the conventional pyrogenic silica of Bock has already been extensively discussed and repeatedly emphasized during the prosecution of this case, as well as exemplified in the present specification.

Bock claims priority to German patent application DE 19811790, which is discussed in the present specification (See e.g., page 1, lines 8-17, page 22, lines 3-6, and page 23, lines 2-4). While Bock describes conventional *surface* modified (not to be confused with “*structurally* modified”) pyrogenic silica, Bock fails to disclose or suggest structurally modified pyrogenic silica, as presently claimed. The jet dispersion process of Bock is equivalent to the optional post-grinding process described in the previously discussed references. Based on a reasonable interpretation of these references, merely subjecting pyrogenic silica to such a jet dispersion process alone is insufficient for imparting structural modification to the pyrogenic silica. Therefore, the claimed structurally modified pyrogenic silica is *fundamentally different* from the conventional pyrogenic silica described in Bock.

This fundamental difference is further substantiated by the direct comparison set forth in Example 4 and Table 6 of the present specification (See e.g., pages 22-24). As evidenced by the comparative experimental data, unlike the structurally modified pyrogenic silica of the claimed lacquer composition, the conventional pyrogenic silica (i.e., Aerosil® R 972) of the coating composition of Bock exhibit undesirable orange peel and low scratch resistance on the surface thereof.

As discussed in the present specification, undesirable orange peel is attributable to the conventional pyrogenic silica of the coating composition of Bock negatively affecting the rheology thereof, thereby resulting in highly flawed coating surfaces (See e.g., page 1, lines 8-17). Applicants have discovered that the structurally modified pyrogenic silica of the claimed lacquer composition of the present invention exert negligible effects on the rheology thereof, thereby resulting in high gloss transparent lacquer surfaces that do not exhibit undesirable orange peel (See

e.g., page 7, lines 6-26, page 12, lines 7-13, page 24, Table 6 and lines 6-12). Applicants have also discovered that in comparison to the conventional pyrogenic silica of the coating composition of Bock, the structurally modified pyrogenic silica of the claimed lacquer composition of the present invention exhibit superior scratch resistance, as measured by the percentage of residual gloss after being subjected to surface scratching (See e.g., page 7, lines 6-26, page 12, lines 7-13, page 24, Table 6 and lines 6-12).

Based on the foregoing discussion and supporting evidence, one of ordinary skill in the art would immediately recognize that the claimed “structurally modified” pyrogenic silica of the lacquer composition of the present invention is fundamentally different from the conventional pyrogenic silica of the coating composition of Bock.

The Examiner’s conclusion on page 4 of the Official Action that the conventional pyrogenic silica of Bock has been rendered “structurally modified” by virtue of only being subjected to a jet dispersion process alone constitutes “official notice” that is unsupported by documentary evidence, in direct contradiction to the evidence presented in the present specification and unreasonable given that the jet dispersion process of Bock is equivalent to the optional post-grinding process described in the previously discussed references.

Applicants respectfully request that the Examiner provide substantial and concrete evidence to support this assertion or provide an affidavit setting forth specific factual findings predicated on explicit and sound technical and scientific reasoning to support the conclusion that the conventional pyrogenic silica of the coating composition of Bock is “structurally modified” in accordance with the pyrogenic silica of the claimed lacquer composition of the present invention. See e.g., 37 C.F.R. § 1.104(d)(2), *In re Zurko*, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001) and MPEP § 2144.03.

Applicants again respectfully submit that the disclosure of Bock clearly fails to anticipate or render obvious to a skilled artisan the presently claimed invention.

Withdrawal of this ground of rejection is respectfully requested.

In conclusion, Applicants submit that the present application is now in condition for allowance and notification to this effect is earnestly solicited.

Respectfully submitted,

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